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ABSTRACT

This description of career education activities in Fort Lauderdale, Florida, was prepared as part of a study conducted to identify evaluated, exemplary career education activities which represent the best of the current career education programs and practices referred to in Public Law 93-380. (See CE 018 212 for the final report of this study.) This document describes one of ten projects selected from 250. It presents one locale's way of successfully implementing a career education activity, the results of which are educationally significant. Described for each of the ten projects are project overview, program development, materials and activities, parent and community involvement, staffing and management, costs, evidence of effectiveness, and conclusions. Ultimate goals of this--the Educational Progress in Careers (EPIC)--project were: (1) incorporate employers' and other business leaders' concerns into the concepts of career education; (2) collaboratively develop an instrument to assess whether career education has been implemented according to these concepts; and (3) develop valid and reliable instruments to assess student career education outcomes. Content validity, usability, construct validity and reliability of the instruments are described. (EM)

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PROJECT EPIC

EPIC, Inc.

Fort Lauderdale, Florida

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American Institutes for Research

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Project EPIC

30 June 1978

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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FOREWORD

This activity description was prepared as part of a study conducted by the American Institutes for Research (AIR) under contract No. 300-77-0303 to the U.S. Office of Education. The purposes of the study were to identify evaluated, exemplary career education activities; to recommend identified activities to the Joint Dissemination Review Panel (JDRP) of the Education Division, Department of Health, Education, and Welfare; to prepare descriptions of identified activities; and to develop a handbook with six models for evaluating career education activities.

The criteria established for screening activities in this study intentionally limited choices to those whose evaluation reports presented evidence of effectiveness. Close attention was given to the soundness of evidence in evaluation reports. A minimum requirement for this evidence of effectiveness was that some comparison standard be provided so that gains made by the students participating in the activity could be attributed to the impact of the activity. After confidence in the evidence of effectiveness was established, further criteria were applied. These criteria included consistent relationships between a well-planned assessment of needs, a statement of desired student outcomes, the selection of instruments, and the procedures used in data collection, management, and analysis.

This document describes one of ten projects that was selected from among 250 submitted. It presents one locale's way of successfully implementing a career education activity, the results of which are educationally significant. Although the description reflects an activity developed in response to local needs, other school districts with similar needs may wish to adapt parts or all of it according to their own circumstances and philosophy.

We are especially grateful to the staff of Project EPIC and to the school district staff members and business leaders who generously gave their time to answer questions from AIR site visitors. They extended a special kind of hospitality and spared no amount of effort to provide the information necessary to prepare this description. They made it possible for the site visitors to understand the philosophy and strategies that underlie the program's operation.

Project EPIC instruments and procedures were judged to be free of bias with regard to race, sex, age, income levels, and type of occupation.

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Appendix A: Project EPIC Contract Statements and Resulting Activities: 1974-76

Appendix B: Ten Components of Career-Economic-Community Education

Appendix C: Procedures for Validating Instruments

PROJECT OVERVIEW

TITLE & LOCATION: Project EPIC (Educational Progress In Careers)
EPIC, Inc.
1105 Citrus Isle
Fort Lauderdale, Florida 33315

TYPE: Education and Community Council

PROJECT DIRECTOR: Tom Justiz
Ph: (305) 527-1909

SETTING: This project provided a statewide mechanism for involving business leaders in the career education of students. The mechanism was comprised of two coordinated groups: (1) a non-profit corporation called EPIC, Inc., and (2) a statewide evaluation committee representing the range of Florida businesses.

STAFF: EPIC, Inc. had a six-member Board of Directors, a Project Director, and an Administrative Assistant. The Statewide Evaluation Committee had 56 volunteer members.

GOALS: The three goals were to: (1) incorporate employers' and other business leaders' concerns into the concepts of career education; (2) collaboratively develop an instrument to assess whether career education has been implemented according to those concepts; and (3) develop valid and reliable instruments to assess student outcomes for those students who have been involved in career education as defined by the concepts developed in the first goal above.

EVALUATION DESIGN: The instruments that were developed under goals two and three above were required to pass tests of content validity, usability, construct validity, and reliability. Content validity was cross checked by both state and local educational and occupational experts working in task force groups. Usability was established by teacher-review and by pilot testing the instruments. Construct validity and reliability were assessed in a formal field test conducted in career education and control classes in three Florida counties.

MATERIALS: The Project EPIC Contract Statements and Resulting Activities, listed in Appendix A, provides a detailed list of steps in the process of achieving project goals. The Ten Components of Career-Economic-Community Education presented in Appendix B express the major career education concerns of Florida business representatives. In addition, there is an instrument for assessing the level of implementation of career education and 14 student outcome instruments for grades 2-12.

COSTS: The major cost items over the two-year period of this project were staff salaries, travel, and communication. A major cost-saving factor was the time volunteered by industry and community representatives. The total cost was $139,750.

PROJECT DESCRIPTION

Project EPIC has demonstrated that the business community can take an effective leadership role in forming a dynamic cooperative relationship with schools on a statewide level. Other states will not likely have identical institutions nor the same historical background on which to build a similar project; however, the value of Florida's Project EPIC to other states is in the processes it used and found highly workable in achieving its goals. The emphasis of this report is on those processes by which the business community contributed its special knowledge and insights to students in the school system.

PROGRAM DEVELOPMENT

Background

In Florida there exists a statewide organization called the Council of 100 which represents major business firms across the state. The purpose of that group generally is to promote the economic well-being of Florida. The Education Committee of the Council of 100 over the years has worked closely with the Florida Department of Education in promoting legislation of importance to the education of Florida's youth and adults. Three areas of focus have emerged in the work of the Education Committee. They are career, economic, and community education. In all three areas, important legislative bills were passed. The question of concern to the Education Committee was whether the funds provided by these bills were having the desired impact on students.

In 1970, a bill was passed that provided for career education in all 67 of the county school districts in Florida. During the period of 1970-1976, $32 million in state funds were committed to the support of career education personnel and to program development. The Vocational Division of the Florida Department of Education was instrumental in fostering the development of innovative programs and implementing those programs in schools.

About midway through that six-year funding period, the Education Committee of the Council of 100 conducted a national search of school programs in an attempt to answer to its own satisfaction the question, "What is it in the educational system that causes a large number of students to come out as non-contributing members of society?" Based on their findings, they reached the following conclusions:

Some of our children are graduating into the job market with limited salable skills and inadequate preparation to advance in our business world. It is not just a problem of funding.

As urban population pressures have increased, the role of the traditional family unit has diminished. Most children seldom see their parents at work or really understand what they do. Teachers are becoming substitute parents for our children.

Today's teachers have spent their lifetimes in schools and other educational facilities, and decreasingly understand or fairly reflect the real world in which we live and into which our children will graduate. Concerned educators want to solve this problem, but find difficulty changing direction within the system.

Frustration is rampant. Parents cannot understand their children. Teachers do not understand what responsibilities are expected of them by parents. Students leave schools unsure of themselves as individuals and unprepared for the world they wish to conquer. Employers are increasingly spending money and time to equip job applicants with entry-level skills.

Citizens find it difficult to cope with community problems brought on by modern technology and greater leisure time. As technology has become more complex and as productivity is dependent on fewer and fewer people, the child, or the family, frequently is not directly exposed to "primary production" in the world of work. Modern technology is usually so productive that it tolerates a great many occupations which are parasitical while, at the same time, it has become too complicated for the unsophisticated to comprehend.

It is apparent from these conclusions that the Education Committee of the Council of 100 viewed educational problems as but manifestations of larger community problems. The Committee grasped the community scope of the issues involved and proceeded to work toward a combined school/community approach to the beneficial resolution of those issues.

Formation of EPIC, Inc.

The Education Committee of the Council of 100 realized that its committee structure was not sufficient to undertake the major projects required in the solution of school and community problems. They chose, instead, to form a separate corporation. Six committee members were designated as the Board of Directors of the new corporation and the Education Committee chairman became chairman of the Board of Directors. The non-profit corporation was named EPIC, Inc., an acronym for Educational Progress In Careers. Such an organization could comply with regulations that would qualify it to apply for

public funds to help support its mammoth undertaking. As a legal entity in itself, the corporate form can continue under the same charter even though there is a turn-over in ownership and directorship.

Goals

Six goals were specified for EPIC, Inc. in its two years of operation:

- To give many Florida students their first broad exposure to what they need to succeed in the world of business.
- To expose students to the world of Florida occupations, and the various dimensions of the field of economics.
- To expose educators and school administrators to career and economic elements.
- To give Florida school district personnel some valid and reliable methods for demonstrating the progress of their career, economic, and community education programs.
- To develop valid data collection procedures at the elementary, middle (junior high), and senior high levels, within specified time limits, which students will find comfortable while proceeding to work through the instrument battery.
- To develop a method for continually involving business representatives, parents, and educators in evaluating career, economic, and community education.

Methods of Achieving the Goals

To achieve the goals set for EPIC, Inc., hundreds of individuals were involved in various activities at both the state and local levels. The sequencing and coordination of those activities required careful planning by EPIC staff since success of the project obviously depended heavily on that planning effort. The long list of activities was performed in six phases, as follows:

- Organize the statewide evaluation committee.
- Define and validate the components of career, economic, and community education in Florida schools.
- Develop a set of criteria and related instruments for evaluating the components.

- Perform an external evaluation in three selected school districts for the purpose of validating the EPIC instruments.
- Develop a set of evaluation guidelines.
- Develop separate guideline publications for elementary, middle/junior high, and secondary educational levels.

Practical accomplishment of these six phases hinged on attention to detail in the execution of specific activities. Because such detail would be equally important to anyone contemplating a similar effort, the complete list of Project EPIC contract statements and resulting activities is presented in Appendix A.

The complete list of activities provides a glimpse of what was required to involve so many individuals at state and local levels in the process of instrument development and validation. More was required than simply setting up meetings and telling people what to do. The individuals held strong opinions and were committed to the implementation of their ideas; however, they were also committed to the cooperative effort required to achieve a common goal. The tasks of EPIC staff were to maintain focus on the common goal, make sure that all opinions were given thoughtful consideration, and direct the diversity of opinions toward resolutions.

MATERIALS AND PRODUCTS

The tangible products of Project EPIC, while highly pertinent to Florida's educators and students, may not be as applicable in other states. For this reason, the products (or samples of products) are given in the appendix rather than being featured in the body of this report. What is more likely to be relevant in other states is the process of involving community and educational leaders in developing products that are highly relevant to the state and LEAs where they will be used. That process is highlighted in this section on how Florida's particular products came to be developed.

Ten Components of Career-Economic-Community Education

The Education Committee of the Council of 100 set out a list of educational concerns and the members of the Council, and eventually the EPIC Statewide Evaluation Committee, tested the language of those concerns on a "consensus" basis. The resulting ten components of career-economic-community education

reflect the "consensus" of EPIC members as well as participants of the Orange, Broward, and Pinellas Workshops (November 1975 through February 1976).

The resulting 10 components are:

1. Knowledge of the economic system
2. Knowledge of occupations
3. Guidance for realistic career decisions
4. Employment-entry skills
5. Alternatives for potential early school leavers
6. Student-worker contacts
7. Placement and follow-up
8. Staff development
9. Community improvement
10. Community-school facility utilization

The complete annotated list of the 10 components is in Appendix B.

Process and Student Variables

The 10 components were given operational definition by designating 18 processes by which to achieve 25 student outcome behaviors. The 18 process variables are:

1. Identification and Referral of Potential Early School Leavers
2. Field Trips
3. Workers Visiting Students
4. Career Days/Fairs
5. Shadowing Experiences
6. Employer-Based Cooperative Programs
7. Jobs Available
8. Student Placements
9. Student Follow-Ups
10. Economic Activities in Related Disciplines
11. Worker Titles
12. Work Skills
13. Staff Roles
14. Staff Attitudes
15. Workshop Participation
16. Parent Attitudes
17. Program, Service, Facility, Organization Demand
18. Course Registration Demand

The 25 student outcome variables are:

1. Profit
2. Productivity and the Market
3. Labor Market Demand
4. Consumer Economics
5. Business Cycles and Monetary Policy
6. The Roles of Government
7. International Trade and Monetary Policy
8. Comparative Economics
9. Worker Titles (Recall)

10. Workers in Different Industries
11. Education/Training/Licensing/Union Requirements of Jobs
12. What Workers Do on the Job
13. Knowledge About Career Planning
14. Career Planning Activities Checklist
15. Talking About Careers
16. Career Decision-Making
17. Worker Titles (Identification)
18. Career Interests
19. Job Expectations
20. Employee Work Habits
21. Employee Traits and Mannerisms
22. Interviewing for a Job
23. Inventory of Work Skills
24. Attitudes Toward School
25. Attitudes Toward Careers

Instruments to Assess Process Variables

Six sources of data were designated for assessing the 18 process variables and a separate instrument was developed for each, as follows:

- School Coordinator's Questionnaire
- Placement/Follow-Up Director's Questionnaire
- Career Education Director's Questionnaire
- Teacher's Questionnaire
- Community Needs Survey
- Community Education Director's Questionnaire

Instruments to Assess Student Outcome Variables

Fourteen instruments were developed to assess the 25 student outcome variables. These are listed below, along with testing time required and grade range to which each instrument applies.

Student Performances in Career and Economic Education:	Maximum Minutes	Grade Level Range 2-4	7-8	10-12
Knowledge of the Economic System	5	x		
Knowledge of the Economic System	10		x	
Knowledge of the Economic System	10			x
Worker Titles	10	x	x	x
Workers in Different Industries	20	x		
Workers in Different Industries	10		x	
Preparation for Employment	10		x	

Students Performances in Career and Economic Education:	Maximum Minutes	Grade Level Range 2-4	7-8	10-12
Job Requirements and Functions	30			x
Career Planning	15		x	x
Considering Careers	15		x	x
Acquiring and Maintaining a Job	15			x
Inventory of Work Skills	15			x
Attitudes Toward School and Careers	5	x		
Attitudes Toward School and Careers	10		x	x
Critique 7-8/10-12	--			
Total testing minutes per grade level range		40	80	120

Two Examples of Instrument Development

This section describes the development of the Teacher's Questionnaire and the Knowledge of the Economic System instrument.

The Teacher's Questionnaire. This instrument was developed in its original form by the career education project coordinators of Orange, Broward, and Pinellas Counties; however, a major section of the Teacher Questionnaire was based upon 130 representative occupations of Florida that had been assembled by the EPIC staff. To arrive at such a list, EPIC staff identified 1800 occupations in 13 clusters from several sources, both national and state. Those sources included the U.S. Office of Education Cluster Analysis, Florida Project VIEW occupations, the Florida Jaycees CAP Project, New Career Education units, a Florida occupations instrument, contributions from EPIC specialists, and a labor-market demand report from the Greater Miami Chamber of Commerce. Then, individual members of the State Evaluation Committee and other participants in the project independently selected 10 occupations most representative of each cluster. The final list of 10 occupations in each cluster was achieved by group consensus with some emphasis given to those occupations for which there was high Florida labor-market demand.

The questionnaire was constructed to assess learning activities that exposed students to each of the 130 occupations. It also assesses other aspects of career development such as economic knowledge, career decision making, and job-seeking skills. Three workshops were held, one in each of the three participating counties, for the purpose of reviewing, critiquing, and

revising the process assessment instruments, including the Teacher's Questionnaire. All criticisms and comments were reviewed by members of the Statewide Evaluation Committee and compared to the revisions based upon those critiques. Following this, the instruments were ready for use in the field test in six schools in each of the three participating counties.

Knowledge of the Economic System Instrument. This instrument is discussed here to illustrate the steps required for its development. This particular instrument was arbitrarily selected since all 14 student outcome instruments went through similar steps and any one of them would illustrate the process equally well.

This instrument was developed through eight steps, as were all the student outcome instruments. The eight steps are presented in Appendix C.

It is instructive to see how this particular instrument was developed from the beginning up to the point of formal field test. The specific steps were as follows:

- Ninety-six test items were developed, based on the Joint Council on Economic Education test, "Manpower and Economic Education," July 1972, and some inputs from EPIC members. These test items were critiqued by a member of both the EPIC Board and the Florida Council on Economic Education, and several ambiguous items were eliminated.

- Student scores from the Broward, Orange, and Pinellas school districts (9th through 12th grade) were subjected to computerized item analysis. After deleting items, 60 items were categorized into eight areas of general economic knowledge. Additional items were added to the eight categories until there were 20 x 8 items (totaling 160 items).

- Two hundred ten students from the three districts (grades 9th through 12th) produced pre-test scores which were between 4.6 and 7.2 percentage points better than chance. Seventy-nine out of the 160 items were used for scoring, based on a computerized reliability analysis.

- A critique of the items was submitted, suggesting a reduction in the number of items and an elimination of certain items with an implied value judgment. At the EPIC workshops for Orange County staff, these recommendations were achieved. The first 10 items were designed as "preferred," i.e., four staff members working as a team on each category agreed with the EPIC scoring key. The next group of two to five out of 10 items in each category were agreed upon, but not preferred. (These were "alternate" items for the second workshop in Broward County.) The remaining items in each category were labeled "ambiguous," as the staff could not agree among themselves and with the EPIC scoring key.

- EPIC members deleted some ambiguous items while approving the remaining items. At the EPIC workshops for Broward County staff, consensus was

reached on 10 items per category. Each item was designated as appropriate for a student at either the 9th, 10th, or 11th grade. There were 22 items appropriate for 9th graders, 45 items appropriate for 10th graders, and 80 items appropriate for 11th graders.

- Following the January 16, 1976, EPIC conference, two "matching" instruments were developed with 40 items each. Items were divided based on (a) an equal number of 9th and 10th grade items; and (b) an equal number of True and False responses. Instruments were critiqued by EPIC members. Items were further assessed with a grade level readability formula.

- Sixteen participants of the Pinellas workshop stressed that Economics should be included (as Career Education is now) in all subject areas; for example, social studies, home economics, math, business, and geography.

STAFFING AND STATEWIDE SUPPORT

Roles of EPIC, Inc.

EPIC, Inc. had six members on its Board of Directors, a Project Director, and an Administrative Assistant. Its first job was to obtain funding. The Directors felt strongly that, since EPIC was a project for the state, it should receive its funding from the state. Consequently, the Project Director prepared a proposal for funding which was submitted to the Florida Department of Education for consideration by the Vocational Division. The proposal won a contract for support and funding from federal Vocational Education Act Part C funds.

The next task of EPIC, Inc. was to organize a statewide group of highly qualified and committed community and education leaders. For help in achieving this task, EPIC spontaneously turned to the Council of 100 and to the Vocational Division of the Florida Department of Education. The end result of this task was the formation of the Statewide Evaluation Committee.

The Statewide Evaluation Committee

One of the underlying assumptions of Project EPIC is that students are not adequately prepared to cope with our complex technological and economic society. EPIC, Inc. was set up for the purpose of assessing whether schools, with the aid of career education funding, were making headway in meeting this profound need. The Statewide Evaluation Committee was organized as a representative of modern technological society. In other words, the Committee was

to be the "sounding board" of Project EPIC to specify in operational terms what educational outcomes would best prepare students for today's economic world.

The Statewide Evaluation Committee was comprised of successful business, labor, and professional executives who were strongly committed to the volunteer services that would be required of them. A logical source of such volunteers was the Council of 100, which ultimately provided 17 of the 56 members of the Statewide Evaluation Committee. The remaining 39 members were acquired through nominations by the Council of 100 and personal contacts to solicit their participation. Among the occupational areas represented on the Statewide Evaluation Committee were labor, health, manufacturing, insurance, finance, construction, science, retail trade, engineering, environment, entertainment, and farming.

Other Statewide Representation

The following list of statewide and local associations officially endorsed a resolution of support for the EPIC project and contributed hours of volunteer work through one or more of their members:

Aggregates Association of Florida
Associated General Contractors
Broward Manufacturers Association
Environmental Management Association
Florida Accountants Association
Florida AFL-CIO
Florida Bankers Association
Florida Chamber of Commerce
Florida Concrete and Products Association
Florida Dietetic Association
Florida Engineering Society
Florida Forestry Association
Florida Independent Mutual Agents, Inc.
Florida Hospital Association
Florida Institute of Public Accountants
Florida Jaycees
Florida Medical Association
Florida Pollution Control Association, Inc.
Florida Retail Federation
Florida Roofing, Sheet Metal, and Air Conditioning Contractors Association, Inc.
Florida Society of Dentistry for Children
Florida Trucking Association, Inc.
Florida Veterinary Medical Association
The Greater Miami Chamber of Commerce
The Independent Dispensing Opticians of Florida, Inc.

The Florida Department of Education was the source of valuable personal assistance, particularly through: the Vocational Division; the Bureau of Research, Dissemination, and Evaluation; the Bureau of Vocational Programs and Staff Development; the Student Services, Elementary and Secondary Division; and the Adult and Vocational Guidance, Elementary and Secondary Division. Individuals who served the project included occupational, guidance, placement and follow-up, and staff development specialists.

Local School/Community Representation

The Florida Department of Education identified three county school districts to serve in two capacities. One capacity was to provide local (county) school/community committees as "sounding boards" to assure that local career needs were met by the operational definitions prepared by the Statewide Evaluation Committee. The second capacity of each of the three county school/community committees was to plan and oversee the pilot and field tests of measurement instruments that were developed.

COSTS

The approximate developmental costs by line item for the two-year EPIC project are as listed below. Computation of costs per pupil was not considered applicable.

EPIC Line Item	Expenditures Over Two Contract Years
Staff	$ 78,850
Outside Consultants	11,200
Local Managers	75
Secretarial & Asst's	24,100
Travel	5,800
Per Diem	2,900
Supplies	2,100
Telephone	4,200
Equipment	2,000
Reproduction	3,300
Publishing	1,400
Miscellaneous (Conferences, Materials)	3,825
TOTAL	$139,750

EVIDENCE OF EFFECTIVENESS

Evidence of effectiveness was sought with regard to critical questions that had to be answered as the project progressed. Do the instruments appear to be measuring what business executives and educators think they should? Is

each instrument targeted to the appropriate grade range? Do teachers find the instruments obtrusive? Will they use them? Do students find the questions helpful even if they can't answer many items correctly on the pretest? Do the instruments, in fact, discriminate between students who have achieved the objectives of career education and those who have not? Are the instruments reliable?

Discussion of these questions has been grouped under four headings in this "Evidence of Effectiveness" section. They are: Content Validity, Usability, Construct Validity, and Reliability. The fifth heading is a Summary of the Evaluation Steps. At the end of this section, the six goals are restated and the results pertinent to each goal are summarized.

Content Validity

The question of whether the instruments appear to measure what they are supposed to had to be answered to the satisfaction of everyone who had been designated as an expert on this issue. These experts included EPIC staff, the Statewide Evaluation Committee, and each of the three county business-education-parent committees. All six process instruments and 14 student outcome instruments, after intensive review and revision cycles, were approved by these panels of judges.

Usability

Usability, of course, had to be established by the ultimate users of the instruments. The users were teachers and other school staff who administered the measures and interpreted the results. Users also included students who responded to the student outcome instruments, parents who filled out the Community Needs Survey and also studied their children's results on the student instruments, and respondents to the other process instruments.

The comments below represent the positive reactions that were consistently expressed by various users of the instruments:

- "I think it is a good program, but I'm not involved enough to give a good opinion." --parent's comment.
- "Any program developed to aid the student in the working world is long overdue." --another parent's comment.
- "A great deal of comprehensive thinking has gone into these instruments. For the most part they are worded well. I believe they should

bring forth some valuable commentary and provide a method of making our learning more practically oriented for the big world outside. More and more, we are seeing the need for involving business people and the community in planning a realistic curriculum. Too many hours in school could be better spent in helping students cope with life and the business world; instilling the need to update skills continuously after leaving school; keeping informed for survival economically." -- comment by school district staff member.

- "I learned about careers and where to find jobs." -- comment by junior high student.
- "Well, most of the tests were very interesting, and I know I'll be asking myself those questions soon." -- comment by a senior high school student.

The testing time for the complete battery of tests was established at 40 minutes for grades 2-4, 80 minutes for grades 7-8, and 120 minutes for grades 10-12. These testing times proved to be well within toleration limits of students and convenient with regard to scheduling constraints in most schools.

Careful attention was given to readability, clarity, and singularity of meaning of each of the items. Attention to this matter at each tryout resulted in instruments that caused little or no frustration to students. The ceiling and floor effects of each instrument were adjusted until the instruments were appropriate to the target grade levels.

Construct Validity

Construct validity was assessed by administering the instruments to students who had been involved in career education (treatment group) and to students who had not been involved in career education or whose involvement had been minimal (control group). This was done by identifying an elementary, junior high, and senior high school each designated as a career education school and then finding a comparable school to pair with each one as its control. This resulted in three treatment schools and three comparable control schools. The same procedure of designating three treatment schools and three control schools was carried out in three separate counties. Consequently, tests of construct validity were carried out independently in three separate localities. Since reliability was assessed along with construct validity, reliability was also independently assessed in three counties.

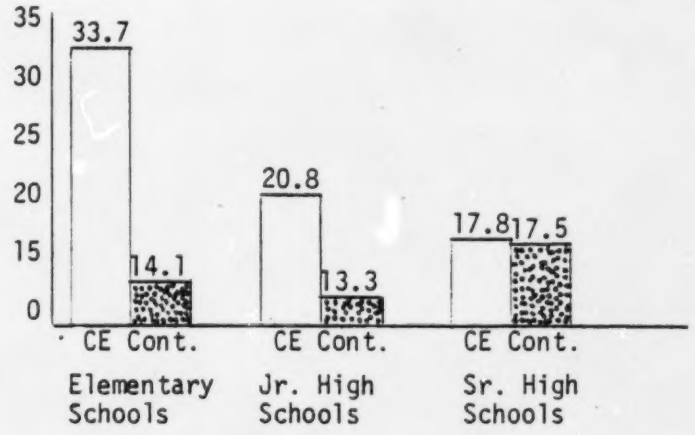
It should be pointed out that the six process instruments were also administered in each of the three counties, thus providing assurance that these instruments would be generally usable in counties throughout Florida. Also of particular relevance to the assessment of construct validity of student instru-

ments are the results of the Teacher Questionnaire. This process instrument provided a measure of the degree of implementation of career education in a given school. In each career education school and each control school the Teacher Questionnaire was completed by as many teachers as possible, up to 25 per school.

Results of the Teacher Questionnaire. For each school, an average score on the Teacher Questionnaire was calculated. This indicated how much career education took place, on the average, in each teacher's classes in that school. These results are particularly pertinent to construct validity of these student measures because the Teacher Questionnaire assesses career education implementation, as defined by EPIC and the Statewide Evaluation Committee. In other words, schools that achieve a high mean score on the Teacher Questionnaires are providing career education activities that future employers of the students believe to be most crucial.

The results of the Teacher Questionnaire data are shown in Figure 1. First of all, Figure 1 shows that schools originally designated by their school principals as career education schools did in fact score higher than the control schools at the elementary and junior high levels. The difference between career education

Figure 1
Average Scores on the Teacher Questionnaire



schools and control schools was greater at the elementary than at the junior high level. At the senior high school level the treatment and control schools did not turn out to be different on the Teacher Questionnaire results; consequently, it is doubtful that those schools provided usable data on the construct validity of the senior high school level student measures. The Teacher Questionnaire thus

proved itself to be a valuable contributor to this particular validity study in that it showed the standard procedures for designating career education and control schools to be inadequate.

It turned out that the senior high level career education schools did not produce higher student outcome scores than the control schools. Fortunately, because the Teacher Questionnaire results showed that this was due to a problem with the schools and not necessarily with the instruments, the instruments were not shelved out of hand. Instead, further opportunities to check their construct validity were sought.

A Sample of Student Outcome Results. For purposes of illustration, the results of one of the instruments are presented here. The instrument is entitled "Preparation for Employment" and it is a junior high level measure. This instrument consists of a list of 36 workers. Students are to check the ten that they believe require the greatest amount of preparation for employment. Then, on another page which lists the same 36 workers, students check the ten workers that they believe require the least amount of preparation for employment. Ten minutes maximum testing time are allowed. Three of the workers listed are:

- Air conditioning contractor
- Architect
- Assembly line worker

Architect is one of the ten to be checked as "most," assembly line worker is one of the ten to be checked "least," and air conditioning contractor is one of the 16 that should not be checked either most or least.

The results in each of these counties are presented in Table 1 which shows the mean and standard deviation of each group of students. The career education classes are designated by the letters CE in the table. By reading across the line of seventh grade results at the top of the table, you see that the CE group achieved a higher mean score than the control group in both county 1 and county 2, but that the means were the same in county 3. The same trend occurred in the eighth grade results.

An analysis of variance statistical test was employed to assess the statistical significance of differences between grade levels and between career education and control groups. Overall, career education classes performed better than control classes and eighth grade classes better than seventh grade classes. The tests also showed statistically significant differences among the three counties.

Table 1

Preparation for Employment (Grades 7 and 8)[a] (highest possible score is 20)

	County 1				County 2				County 3			
	CE		Control		CE		Control		CE		Control	
Grade	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
7	10.2	2.9	9.3	2.8	10.0	3.5	8.1	4.2	11.8	2.5	11.8	2.8
8	12.3	2.6	11.0	2.2	12.3	2.9	9.6	3.2	12.5	1.7	12.7	2.2

[a] N = 20 in most cells

Reliability of Student Outcome Instruments

Each instrument was designed to measure only one concept and every item in the instrument should contribute to the assessment of the one dimension represented by that concept. To achieve this end, every time the instrument was administered to a group of students, the item scores (right or wrong) were correlated with the total test score. Those items that did not prove to be contributing consistently to the students' total scores were replaced.

The Kuder-Richardson Formula 20 (KR20) was applied to check reliability of the instruments. This formula provides an estimate of the score one would get by splitting the instrument in half every possible way and correlating the two scores of each split-half pair. The KR20 estimates of reliability were found to be in the acceptable range for most of the instruments.

All instruments, including the six additional instruments for collecting process data from teachers, administrators, and parents were developed in coordination with the career education project coordinators of the Orange, Broward, and Pinellas career education projects. These coordinators arranged workshops where career-economic specialists and parents modified the content and grade-level range of many items, so that by March, 1976, there were agreements reached between the business-education-parent communities in the three districts.

EPIC worked with the Chairman of the State Advisory Council for Community Education in the development of the instrument for community education directors.

A total of over 2,800 students, 600 staff members, 25 administrators, and 350 community members from the Orange, Broward, and Pinellas school districts

submitted data which were used to validate the EPIC instrument battery at several intervals of the project as follows: April-May, 1974 (pilot tests); September-October, 1975 (field tests); March, 1976 (posttests).

Attainment of the Six Project Goals

Goal 1: To give many Florida students their first broad exposure to what they will need to succeed in the world of business.

Results

Approximately two-thirds of the students tested reported no previous exposure to the types of items in the test battery. Over 50% of all students indicated some kind of gain in occupational knowledge and/or career planning as a result of the exposure to the instruments.

Goal 2: To expose students to the world of Florida occupations, and the various dimensions of the field of economics.

Results

Approximately two-thirds of the students reported no previous exposure to the world of Florida occupations as contained in the test battery. Approximately 74% of the students tested reported no previous exposure to the various fields of economics tested by the EPIC instruments.

Goal 3: To expose educators and school administrators to career and economic elements.

Results

Teacher responses indicate that some students are being exposed to approximately 50% of the possible areas of economics, two-thirds of an industrial cross-section sample of occupations, and 50% of an industrial cross-section of work skills.

Goal 4: To give Florida school district personnel some valid and reliable methods for demonstrating the progress of their career, economic and community education programs.

Results

The instruments which measured the knowledge components were able to discriminate between treatment, county and/or grade groups in 22 out of 31 comparisons. All instruments had reliabilities in excess of the level desired for research and evaluation purposes except for one instrument for elementary students. The instruments for measuring career awareness and skills inventory discriminated between career education and control students consistently. Only instruments attempting to measure attitude have not been able to make discriminations between career education and control groups.

Goal 5: To develop valid data collection procedures at the elementary, middle/junior high, and senior high levels, within specified time limits, which students will find comfortable while proceeding to work through the instrument battery.

Results

Only 6% of the middle/junior high and senior high students tested reported that the test was a negative experience within the time limits which were established.

Goal 6: To develop a method for continually involving business representatives, parents, and educators in evaluating career, economic, and community education.

Results

A Statewide Evaluation Committee has been established with 50 members (and alternates). Local business people and parents have been continually involved during all phases of goal setting, instrument design, data collection, and data review.

Review by Joint Dissemination Review Panel

The Joint Dissemination Review Panel (JDRP) was established by the Education Division of the Department of Health, Education, and Welfare in 1972. The joint U.S. Office of Education - National Institute of Education (NIE) Panel currently has 22 members, eleven from each agency, appointed respectively by the Commissioner of Education and the Director of NIE. The JDRP meets periodically to review the evidence of effectiveness submitted for a wide variety of federally supported educational products and practices, with effectiveness being the sole criterion for approval by the JDRP. It is charged with the responsibility of ensuring that educational interventions - projects, products, or practices - have been shown to have positive impacts on their recipients before they are disseminated with federal funds or endorsed by the Education Division.[1]

In May 1978, the JDRP reviewed Project EPIC; they did not approve it for nationwide dissemination. The Panel concluded that the data presented on project instruments did not furnish sufficient evidence for the following questions to be answered satisfactorily: (1) Are the instruments not sensitive to important differences among well-implemented programs?, or (2) Are the instruments good ones that are picking up small differences among poorly-implemented programs? This information is provided so that those school districts interested in adopting Project EPIC may have the advantage of the Panel's suggestions.

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[1] Tallmadge, G.K. The Joint Dissemination Review Panel: IDEABOOK. Washington D.C.: NIE/DHEW, September 1977.

CONCLUSION

The results indicate that the process was effective in channeling the special knowledge and insights of Florida's business community into the school curriculum in three Florida counties. Those schools that had implemented career education as defined by a broadly representative group of business and education leaders did perform better on project instruments than control schools. The instruments themselves were designed to be relevant to Florida's schools and Florida's business opportunities; however, the processes described in this report may be very useful to other states when school and community partnership are being developed.

Appendix A

Project EPIC Contract Statements
and Resulting Activities: 1974-76

Phase I - Organize the Statewide Evaluation Committee

1) An EPIC, Inc. Board of Directors meeting was held on August 1, 1974, for the purpose of organizing EPIC efforts related to the contract.

2) A compendium of proposed EPIC memberships was submitted to Bill Dover (EPIC President). This compendium was distributed to the EPIC Board of Directors on August 26, 1974. The EPIC board members and project manager telephoned the prospective members to qualify their interests.

3) Forty-four (44) prospective members (including the 6-member EPIC board) were qualified by telephone, as each indicated some degree of interest in the EPIC project. A notebook was distributed to each prospective member and to the VTAE Division. The notebook contained the following:

   a) The prospective membership roster
   b) A letter of invitation to all prospective members to join the Statewide Evaluation Committee and to attend the November 12th workshop.
   c) A position paper on Career-Economic-Community Education by the EPIC Board of Directors.
   d) Three related documents, as follows:

      * A Partial Review of Florida Legislative Intent Affecting Career-Economic-Community Education.

      * A Partial Review of Career-Economic-Community Education Concepts.

      * An Introduction to Career Education.

4) In response to the letter of invitation, some prospective EPIC members sent a letter of acceptance to the EPIC project office with appropriate signature.

5) At the November 12th Workshop, each EPIC member received a packet of forms which included:

   a) A timetable of EPIC project events.
   b) A list of project interest areas for task force assignments.
   c) A resolution of support for the EPIC project.

6) The Florida Council of 100 Education Committee met on November 13th. The committee resolved that the EPIC project was too important for the Council of 100 Education Committee to proliferate other projects.

This concluded the EPIC Phase I activity in accordance with the following contractual statements:

I-A Conduct a comprehensive search to determine possible members for the Statewide Evaluation Committee.

I-B Send out letters of invitation and elicit responses.

I-C Determine the committee membership and distribute a resolution for support of this project.

Phase II - Define and Validate the Components of Career, Economic and Community Education in the Florida Schools.

1) At the EPIC, Inc. board meeting on August 1, 1974, the EPIC project manager submitted (for discussion purposes) a partial list of career-economic-community education components.

2) In accordance with the suggestions of EPIC board members, the EPIC project manager summarized a number of positions taken by the Florida Council of 100 Education Committee on career-economic-community education, on August 5, 1974.

3) The EPIC board members submitted critiques of the position statements to the EPIC project office.

4) The project manager, on September 10, 1974, developed a set of components and goal statements and some examples of evaluation criteria from the EPIC board members' critiques.

5) A fourth related document was submitted to the EPIC board for review:

   * A Partial Review and Synthesis of Community Education Concepts.

6) The EPIC board submitted final critiques. The project manager used these to develop a revised set of components and goal statements, and submitted them to the EPIC president for review on October 24, 1974.

7) The project manager developed:

   * A Project Director's Inventory of Career Education Components which may be Evaluated in Florida's Schools

   for review by Florida's Career Education Project Directors at the Statewide Evaluation Conference on September 30, October 1, 2, 1974. The feedback data from the directors at this conference were used to consolidate some of the sub-components related to each EPIC component, from an educator's point of view.

8) The six-hour November 12th workshop on career-economic-community education components (referred to in Phase I - 5) was the organization meeting of the Statewide Evaluation Committee. The comments of EPIC members, when viewing staff members and students demonstrating the EPIC components, was most rewarding. The comments included such terms as "Beautiful," "Thrilling" and "The most exciting things seen in education."

9) The ongoing comments of EPIC members, resulting from this workshop, are listed.

10) A revised set of career-economic-community education components was developed from the comments of EPIC members. This document was reviewed by the EPIC membership and the EPIC president, until consensus was reached and was submitted to the EPIC Board of Directors, the Statewide Evaluation Committee, and to the director of the VTAE Division (on December 18, 1974).

This concluded the EPIC Phase II activity in accordance with the following contractual statements:

II-A The project manager of EPIC, Inc. will identify a number of career, economic and community education components for review by the Statewide Evaluation Committee.

II-B The Statewide Evaluation Committee will review and approve, disapprove or resubmit to the project manager of EPIC, Inc. the statements of components. When consensus is reached, EPIC will submit the components to the director of the VTAE Division.

Phase III - Develop a Set of Criteria and Related Instruments for Evaluating the Components.

1) On January 27, 1975, the Statewide Evaluation Committee received a letter from Bill Dover requesting the committee's review and translation of the Phase II component language into Phase III criteria. The committee submitted endorsements of proposed criteria with some modifications.

2) Two sub-contracts produced the following sets of documents:

   a) A National Search for Career and Economic Education Instrumentation.

   b) A National Search for Community Education Instrumentation.

   (The national search instruments were forwarded to the EPIC contract coordinator in the VTAE Division under separate cover, due to the extraordinarily large volume of documents.)

3) All of the national search instruments were reviewed by the project manager and were categorized in accordance with the relationship of each instrument to the EPIC criteria.

4) 25 EPIC instruments were designed in accordance with 25 EPIC criteria and in an attempt to plug up some of the gaps in the state-of-the-art left by the national search instruments. These instruments and criteria were submitted to the full Statewide Evaluation Committee for review and modification.

5) Two EPIC board meetings were held for the purpose of reviewing and modifying the developing instruments. (The first on March 12th, the second on March 21st.)

6) Each EPIC task force submitted its comments on different instruments.

7) Four complete revisions of the instruments were submitted to the contract coordinator in Tallahassee:

   a) The first revision resulted from the advice of the March 12th EPIC board meeting. (25 instruments.)

   b) The second revision resulted from the advice of the March 21st EPIC board meeting. (The 25 instruments were consolidated into 12 instruments.)

   c) The third revision was submitted following the comments of the EPIC task forces during the Broward County field run (April 10 through April 22, 1975), and in response to the data analysis of that field run (12 instruments were further consolidated into 9 instruments).

   d) The fourth revision was submitted as a result of the Pinellas County pilot test (May 12 through May 16, 1975), and in response to the comments of the EPIC task forces during that time.

8) The director of the VTAE Division obtained clearance from the superintendants of the Broward and Pinellas County school districts for testing the EPIC instruments, and submitted written approval to the EPIC project manager. 1191 students, 181 staff and 179 parents contributed data during the field run and pilot test in these districts.

9) A report of EPIC progress was given to the participants of the Statewide Career Education Project Director's Workshop on May 8, 1975, and was forwarded to the EPIC membership on May 9th.

10) A number of statewide and local associations has endorsed the EPIC project by board resolution.

11) The Dade County Public Schools presented a demonstration of career-economic-community activities which involved business and industry representatives from the greater Miami area. This demonstration was in direct response to a meeting between EPIC member Charles Potter and the Dade County superintendant, following the November 12th EPIC workshop.

12) Several members of the EPIC task forces submitted comments regarding the overall EPIC project.

This concluded the EPIC Phase III activity in accordance with the following contractual statements:

III-A The project manager of EPIC, Inc. will develop evaluation criteria for each identified component.

III-B The project manager will perform a search for career education instrument capability and will develop additional instruments needed to meet the criteria.

III-C The project manager will submit the criteria and instruments to the Statewide Evaluation Committee for review and approval, disapproval or modification, and will then submit the criteria and instruments to the director of the VTAE Division for concurrence.

III-D The VTAE division director will identify schools for pilot testing and will secure permission from the district school superintendent, with a schedule for the instruments to be pilot tested.

III-E The project manager of EPIC, Inc. upon receiving the approval of the director of the VTAE Division (on the criteria, instruments, and schedule for testing), will proceed with a pilot test of all instruments and forms in the selected schools.

III-F The project manager will submit a report to the director of the VTAE Division which will include the components, criteria, instruments and procedures for the proposed evaluations.

Phase IV - Perform an External Evaluation in Three Selected School Districts for the Purpose of Validating the EPIC Instruments

1) The Vocational Division director selected the Florida school districts of Broward, Orange and Pinellas for external evaluation.

2) The EPIC Board of Directors met on July 29, 1975 at the new EPIC project office, 2411 East Las Olas, Fort Lauderdale.

3) The condensed version of the Final Report of Phase I, II and III activity was accepted by the EPIC board and distributed to members of the Statewide Evaluation Committee and to selected executives of statewide associations with whom EPIC had been corresponding.

4) The Statewide Evaluation Committee members were polled for their commitment to the EPIC project for a second year. Executives of statewide associations were also invited to join the Statewide Evaluation Committee.

5) The conditions for the pre-tests of EPIC student product instruments were negotiated with the project directors of the three school districts.

6) Bill Dover directed the EPIC project manager to set up an EPIC speakers' bureau. The Florida Retail Federation requested an EPIC presentation at their annual conference, September 26, 1975.

7) The pre-testing of 625 students (grades 2 through 12) in the Broward, Orange and Pinellas school districts on 23 dimensions of career-economic education, using 6 instruments, began on September 29th (Orange) and was concluded October 17th (Pinellas).

8) The EPIC staff reduced and analyzed all pre-test data on student performance.

9) EPIC, Inc. began the development of an evaluation system for the Broward, Orange, and Pinellas High School Consortium (the BOP project), in accordance with the request of the BOP coordinators and the directive from Bill Dover to "assist and support related Florida projects."

10) EPIC staff members attended the Florida Council on Economic Education (FCEE) Conference on October 28-30, 1975 in Orlando. EPIC has endeavored to coordinate EPIC activities with those of the FCEE.

11) EPIC, Inc. coordinated a media and speakers' bureau program for the Educational Sub-Committee Report to the Florida Council of 100 General Assembly at their semi-annual meeting in Palm Beach, November 7, 1975. Commissioner of Education Ralph Turlington opened the program with a presentation of the 10 EPIC components.

12) An EPIC instrument validation workshop was held for Orange County staff on November 25, 1975.

13) Instrument development summaries were submitted to selected members of the Statewide Evaluation Committee on a specialized basis for each EPIC instrument. Final critiques were requested to culminate at the EPIC January 16th conference.

14) The second EPIC instrument validation workshop was held in Broward County on January 13, 1976. Three district administrators, a high school principal, two parents, and a member of the business community participated with staff members in the further validation of EPIC instruments.

15) Pilot data were collected using the Administrative/Staff Interview Instrument; these data were reduced and distributed to EPIC and lay-community members at the January 16th conference for their review.

16) A training session in the use of EPIC instruments, the scheduling of post-test data collections, and procedures for testing and other data collections in the Orange, Broward and Pinellas school districts was held for all members of the EPIC Statewide Evaluation Committee and lay-community members from the three school districts, at the combined conference for EPIC, Florida legislators, and career-economic education specialists from the three school districts, and community education specialists from Alachua County and the University of Florida.

17) Dr. Phillip Clark developed additions to the present community-school facility utilization instruments.

18) The schedule for post-testing and related data collections in the Broward, Orange and Pinellas school districts is arranged, together with the tentative commitments of EPIC and lay-community members who will participate in this procedure.

19) EPIC held its final instrument validation workshop in Pinellas County on February 18, 1976, where teachers, counselors, occupational specialists and business representatives suggested modifications to almost all of the instruments.

20) 980 students, 265 staff, and 86 parents contributed data during the March, 1976 post-tests. Several instruments at the elementary level were revised mid-way through the post-tests. The data collection procedures were revised continually until all students completed the respective instrument sets comfortably within similar time limits.

21) Data collected during the March post-tests were reduced and analyzed by members of the EPIC staff.

22) A report of preliminary findings was submitted to the Statewide Evaluation Committee on April 30, 1976, for the purpose of eliciting recommendations.

23) A report of the findings, conclusions and recommendations was submitted to the director of the Vocational Division on May 5, 1976 for his review, acceptance and approval.

Phase V - Develop a Set of Evaluation Guidelines

1) A set of evaluation guidelines in booklet form was submitted to the director of the Vocational Division on March 1, 1976. These guidelines include the purposes of the evaluation, the components, criteria, instruments, procedures, cost factors, and suggestions of strategies for organizing resources used in conducting evaluations.

Phase VI - Develop Separate Guideline Publications for Elementary, Middle/Junior High and Secondary Educational Levels

Final Report - Phases I through VI

This concluded the EPIC Phase IV, V and VI activities in accordance with the following contractual statements:

IV - A. The VTAE Division director will select three school districts and will make arrangements for external evaluations to be conducted in each district. The arrangements for external evaluations will include schedules for testing and the clearance of instruments and procedures for data collection.

IV - B. EPIC, Inc., together with appropriate members of the Statewide Evaluation Committee, and members of the local communities, will perform the third party evaluations in the three school districts for the purpose of validating the EPIC instruments.

1. Members of the Statewide Evaluation Committee will designate lay-members of the three selected communities to assist in the evaluation of those community school districts.

2. EPIC, Inc. will hold a training session for all members of the Statewide Evaluation Committee and lay-members of the local communities who will assist with the evaluations. The session will include training in the use of the instruments developed in Phase III, and procedures for scheduling, testing, and data collection in the selected schools.

3. EPIC, Inc. will assist the members of the training session in conducting the third party evaluations of the three selected school districts, so as to guarantee the adequacy and completeness of the data collection.

IV - C. EPIC, Inc will reduce and analyze the data.

1. Data will be reduced and analyzed in accordance with format established in Phase III.

2. All reduction and analysis of data will be performed by members of the EPIC staff to guarantee consistency of data handling on a specialist basis throughout the reduction and analysis.

IV - D. EPIC, Inc. will report the preliminary findings of the evaluation to the Statewide Evaluation Committee for their consideration in drawing conclusions and making recommendations.

1. Members of the Statewide Evaluation Committee who assisted with the evaluation may share the findings with the lay-members of the local community.

2. Members of the Statewide Evaluation Committee may make other recommendations regarding release, distribution, and use of the findings and data.

IV - E. EPIC, Inc. will submit a report of the findings, conclusions, and recommendations to the director of the VTAE Division for his review, acceptance and approval.

V. EPIC, Inc. will develop and present a set of evaluation guidelines in booklet form for use in the VTAE Division evaluation system; such guidelines will include the purposes of the evaluation, the components, criteria, instruments, procedures, cost factors and suggestions of strategies for organizing resources used in conducting evaluations.

VI. EPIC, Inc. will hold a two-day workshop for staff of the Vocational Division not later than June 30, 1976.

Final Report

EPIC, Inc. will submit a Final Report, using the Directions for Preparing Final Reports of Research Related Projects supported by the Vocational Division of the Florida Department of Education.

Appendix B

TEN COMPONENTS OF CAREER-ECONOMIC-COMMUNITY EDUCATION (Final - May 1, 1976)

#1 - KNOWLEDGE OF THE ECONOMIC SYSTEM: Students and teachers should understand the development and workings of our free enterprise system . . so that students may become aware that society is offering them an opportunity to prepare for a career and to provide for themselves in an economic world.

#2 - KNOWLEDGE OF OCCUPATIONS: Students should be encouraged to review labor-market information on available careers and to explore a variety of different work situations.

#3 - GUIDANCE FOR REALISTIC CAREER DECISIONS: Students should be encouraged to plan systematically for a career and become better prepared to make realistic career choices, in terms of their own interests, abilities, achievements and limitations, even as they anticipate changes in careers.

#4 - EMPLOYMENT-ENTRY SKILLS: Students should be provided with "hands-on" experiences which emphasize how academic and vocational skills are used in the working world. These experiences should lead to certificates of skill mastery to encourage students to believe that because of their education, they will not only "fit in," but will eminently succeed in our economic world.

#5 - ALTERNATIVES FOR POTENTIAL EARLY SCHOOL LEAVERS: Potential early school leavers should be encouraged to enter programs which develop skills in basic reading, communications and computation, career exploration, and skills for acquiring and working on a job.

#6 - STUDENT-WORKER CONTACTS: Students should be provided opportunities to make contact with all levels of working adults throughout the community to qualify their interests before choosing specific careers and related life styles.

#7 - PLACEMENT AND FOLLOW-UP: Students should be given the opportunity of employment or some other appropriate placement, such as higher education, before leaving school, through operational placement/follow-up systems staffed with qualified persons.

#8 - STAFF DEVELOPMENT: All administrators and staff should be provided in-service training using career and economic education strategies. Teachers should issue grades based on the completion of assigned tasks to develop students' self-confidence through trial and error performances, so that they may gain greater motivation to try and complete other tasks with less supervision.

#9 - COMMUNITY INVOLVEMENT: Community members should be involved in the planning, implementation and evaluation of educational programs.

#10 - COMMUNITY-SCHOOL FACILITY UTILIZATION: School-community agencies should cooperate for more efficient and flexible (year-round/round-the-clock) use of community facilities, resources and programs to provide educational, recreational and cultural services for every interested member of the community.

Appendix C

Procedures for Validating Instruments

The EPIC student product instruments have undergone the following validations:

1) Instrument content and scoring keys were developed and approved by members of the Statewide Evaluation Committee. As employers and representatives of labor and professional groups, this committee was organized into teams which represented 13 different types of Florida industrial categories (similar to the 15 U.S.O.E. clusters). These teams organized and validated the student product instruments so that students would be exposed to the world of industries in Florida, the various areas of economics, and other dimensions which employers considered critical when evaluating employees.

2) Each of the 25 dimensions of student behavior was compared against the original language of the 8 Elements of Career Education from the U.S.O.E.-Ohio State Comprehensive Career Education Model (CCEM), as a point of departure with which it was presumed most career educators in Florida would be familiar. The 25 dimensions represent an attempt to further define the "8 elements" (a "curriculum language") into a more operational "evaluation language." Each dimension was developed by sorting (sometimes thousands) of test items, so that it would represent a "unique" dimension of student behavior.

3) Each item in each instrument was examined for its ability to discriminate between experimental and control groups of career education students. Most of the items which could not discriminate were eliminated from the battery. Knowledge of economics items was not considered.

4) Each item was examined for "floor and ceiling" effect.. When almost all students in a particular grade level could perform an item successfully, it was eliminated, or moved to a lower grade level. When almost none of the students in a particular grade level could perform an item successfully, it was eliminated, or moved to a higher grade level.

5) Almost all of the items were examined for reading level, using teachers as validators and by using a readability formula. This information was used when packaging the items per grade level range.

6) A number of instruments were selected for each educational level (elementary, middle, and senior high). A maximum time for administering each instrument was given. When all students in different schools, in a particular grade level range (such as 2, 3, 4, or 7, 8, or 10, 11), completed the instruments comfortably in a similar time period (such as 50 minutes for elementary, 90 minutes for middle or junior high, and 120 minutes for senior high), the instruments and data collection procedure were considered "valid."

7) Each sub-set of items within each instrument was examined to determine the extent of correlation of higher scores with higher grade levels. A high positive or negative correlation of scores with grade levels indicated the strong potential of each instrument in establishing norms, and the corresponding wider generalizability of data. (One strength of the EPIC system is its ability to evaluate career education performances in grades two through twelve, across school districts, regardless of individual programs or treatments of students.)

8) The items which reflect student performance best are usually not those with discrete responses, such as true/false or multiple choice. Every effort has been made in the design and validation to preserve those items which elicit the "broader scope" of student performance regardless of the difficulty which these items present during data reduction and scoring.